



GEORGIA

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

Air Quality - Part 70 Operating Permit Amendment

Facility Name: Chattahoochee Energy Facility
Facility Address: 3461 Hollingsworth Ferry Road
Franklin, Georgia 30217 Heard County
Mailing Address: 2100 East Exchange Place
Tucker, Georgia 30084-5336
Parent/Holding Company: Oglethorpe Power Corporation
Facility AIRS Number: 04-13-149-00006

In accordance with the provisions of the Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Georgia Rules for Air Quality Control, Chapter 391-3-1, adopted pursuant to and in effect under the Act, the Permittee described above is issued a construction permit for:

The CT Upgrades Project involving modifications to the facility's combustion turbines.

This Permit Amendment shall also serve as a final amendment to the Part 70 Permit unless objected to by the U.S. EPA or withdrawn by the Division. The Division will issue a letter when this Operating Permit amendment is finalized.

This Permit Amendment is conditioned upon compliance with all provisions of The Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq, the Rules, Chapter 391-3-1, adopted and in effect under that Act, or any other condition of this Amendment and Permit No. **4911-149-0006-V-05-0**. Unless modified or revoked, this Amendment expires upon issuance of the next Part 70 Permit for this source. This Amendment may be subject to revocation, suspension, modification or amendment by the Director for cause including evidence of noncompliance with any of the above; or for any misrepresentation made in App No. **TV-486572** dated **June 19, 2020**; any other applications upon which this Amendment or Permit No. **4911-149-0006-V-05-0** are based; supporting data entered therein or attached thereto; or any subsequent submittal or supporting data; or for any alterations affecting the emissions from this source.

This Amendment is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached **11** pages.



Richard E. Dunn, Director
Environmental Protection Division

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PART 1.0 FACILITY DESCRIPTION**1.3 Process Description of Modification**

Oglethorpe Power Corporation (OPC) is proposing the CT (combustion turbine) Upgrades Project involving modifications to the facility's combustion turbines. The project would result in increases in maximum heat input and maximum projected annual air emissions.

The proposed CT Upgrades Project would involve the implementation of two upgrades for OPC Chattahoochee's two combustion turbines: the Thermal Performance Upgrade One (TPU1) and the Low Load Turndown (LLTD) upgrade.

The TPU1 would improve the combustion turbines plant output and heat rate as well as extend the maintenance interval of the units by installing enhanced hardware in the combustion turbines, replacing certain auxiliary hardware components, and adding site-specific control logic optimizations. These changes would increase the capacity of the facility by approximately 23 MW, with variations for ambient temperatures.

The LLTD upgrade would involve the installation of new combustion turbine components and software controls to replace selected equipment and connected accessories to allow for sustained operations at lower operating loads during periods of low demand.

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Chattahoochee Energy Facility

Permit No.: 4911-149-0006-V-05-1

PART 3.0 REQUIREMENTS FOR EMISSION UNITS

Note: Except where an applicable requirement specifically states otherwise, the averaging times of any of the Emissions Limitations or Standards included in this permit are tied to or based on the run time(s) specified for the applicable reference test method(s) or procedures required for demonstrating compliance.

3.1.1 Modified Emission Units

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
CT8A	Combustion Turbine Unit 8A Siemens-Westinghouse Model V84.3a2 Capacity = 177 MW (ISO) Installed in 2002: 2020 Upgrades	40 CFR 52.21 40 CFR 60 Subpart A 40 CFR 60 Subpart GG**** 40 CFR 60, Subpart KKKK*** 40 CFR 63 Subpart A 40 CFR 63 Subpart YYY Acid Rain CSAPR 391-3-1-.02(2)(b)1. 391-3-1-.02(2)(g)2.	LC8A SC8A CO8A	Dry Low NOx Burner SCR Catalytic Oxidation**
DB8A	HRSG Duct Burner for Turbine 8A Capacity = 95 MMBtu/hr Installed in 2002: 2020 Upgrades	40 CFR 52.21 40 CFR 60 Subpart A 40 CFR 60 Subpart Dc**** 40 CFR 60 Subpart KKKK**** Acid Rain 391-3-1-.02(2)(d) 391-3-1-.02(2)(g)2.	LD8A SC8A CO8A	Dry Low NOx Burner SCR Catalytic Oxidation**
CT8B	Combustion Turbine Unit 8B Siemens-Westinghouse Model V84.3a2 Capacity = 177 MW (ISO) Installed in 2002: 2020 Upgrades	40 CFR 52.21 40 CFR 60 Subpart A 40 CFR 60 Subpart GG**** 40 CFR 60, Subpart KKKK**** 40 CFR 63 Subpart A 40 CFR 63 Subpart YYY Acid Rain CSAPR 391-3-1-.02(2)(b)1. 391-3-1-.02(2)(g)2.	LC8B SC8B CO8B	Dry Low NOx Burner SCR Catalytic Oxidation**
DB8B	HRSG Duct Burner for Turbine 8B Capacity = 95 MMBtu/hr Installed in 2002: 2020 Upgrades	40 CFR 52.21 40 CFR 60 Subpart A 40 CFR 60 Subpart Dc**** 40 CFR 60 Subpart KKKK**** Acid Rain 391-3-1-.02(2)(d) 391-3-1-.02(2)(g)2.	LD8B SC8B CO8B	Dry Low NOx Burner SCR Catalytic Oxidation**

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards are intended as a compliance tool and may not be definitive.

** Catalytic Oxidation System was not required as a result of CO BACT review done in August 2001.

*** Reflects the regulatory applicability for the Combustion Turbines (CT8A, CT8B) and Duct Burners (DB8A, DB8B) following the completion of the Thermal Performance Upgrade One (TPU1) upgrade.

****Reflects the regulatory applicability for the Combustion Turbines (CT8A, CT8B) and Duct Burners (DB8A, DB8B) prior to the completion of the Thermal Performance Upgrade One (TPU1) upgrade.

3.3 Equipment Federal Rule Standards

Modified Conditions

- 3.3.2 The Permittee shall only fire natural gas in Combustion Turbines CT8A and CT8B.
[40 CFR 52.21(j)(2), **40 CFR 60.4330(a)(2)(subsumed) and 391-3-1-.02(2)(g)(subsumed)**]
- 3.3.3 The Permittee shall only fire natural gas in Duct Burners DB8A and DB8B.
[40 CFR 52.21(j)(2), **40 CFR 60.4330(a)(2)(subsumed) and 391-3-1-.02(2)(g)(subsumed)**]
- 3.3.11 The Permittee shall comply with all applicable provisions of the New Source Performance Standards (NSPS) as found in 40 CFR 60 Subpart A – “General Provisions,” and Subpart GG - "Standards of Performance for Stationary Gas Turbines," for the operation of the combustion turbines (ID Nos. CT8A and CT8B). **This condition will no longer apply upon restart of the units following completion of the Thermal Performance Upgrade One (TPU1) upgrade.**
[40 CFR 60 Subparts A and GG]
- 3.3.12 The Permittee shall not burn in Combustion Turbines CT8A and CT8B, any fuel which contains sulfur in excess of 0.8 percent by weight. **This condition will no longer apply upon restart of the units following completion of the Thermal Performance Upgrade One (TPU1) upgrade.**
[40 CFR 60.333(b) and 391-3-1-.02(2)(g)2. (subsumed)]
- 3.3.13 The Permittee shall comply with all applicable provisions of the NSPS as found in 40 CFR 60 Subpart A – “General Provisions,” and Subpart Dc – “Standards of Performance for Industrial, Commercial, and Institutional Boilers,” for operation of the duct burners in the HRSGs (ID Nos. DB8A and DB8B). **This condition will no longer apply upon restart of the units following completion of the Thermal Performance Upgrade One (TPU1) upgrade.**
[40 CFR 60 Subparts A and Dc]

New Conditions

- 3.3.15 Following completion of the Thermal Performance Upgrade One (TPU1) upgrade, the Permittee shall comply with all applicable provisions of the New Source Performance Standards (NSPS) as found in 40 CFR 60 Subpart A - "General Provisions" and 40 CFR 60 Subpart KKKK - "Standards of Performance for Stationary Combustion Turbines," for operation of each of the combustion turbines and duct burners (Emission Unit ID Nos: CT8A, CT8B, DB8A, and DB8B).
[40 CFR 60 Subparts A and KKKK]
- 3.3.16 Following completion of the Thermal Performance Upgrade One (TPU1) upgrade, the Permittee shall not burn in Combustion Turbines CT8A and CT8B and Duct Burners DB8A and DB8B, any fuel which contains total potential sulfur emissions in excess of 0.060 lb SO₂/MMBtu heat input.
[40 CFR 60.4330(a)2 and 391-3-1-.02(2)(g)2. (subsumed)]

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3.3.17 Following completion of Thermal Performance Upgrade One (TPU1) upgrade, the Permittee shall not discharge, or cause the discharge, into the atmosphere from the combined exhaust of each combined cycle combustion turbine and its paired duct burner, any gases which contain nitrogen oxides in excess of the following emission standards on a 30 unit operating-day rolling average basis.

[40 CFR 60.4320, 40 CFR 60.4350(h), 40 CFR 60.4380(b)(3)]

- a. 15 ppmvd, corrected to 15% oxygen, when operating at or above 191 MW (equivalent to 75 percent of peak load); and
- b. 96 ppmvd, corrected to 15% oxygen, when operating at less than 191 MW (equivalent to 75 percent of peak load).
- c. For any 30 unit operating day period during which multiple emission standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard.

PART 4.0 REQUIREMENTS FOR TESTING

4.1 General Testing Requirements

Modified Condition

4.1.3 Performance and compliance tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division's Procedures for Testing and Monitoring Sources of Air Pollutants. The methods for the determination of compliance with emission limits listed under Sections 3.2, 3.3, 3.4 and 3.5 are as follows:

- f. Method 5 and/or 201A in conjunction with Method 202 shall be used for the determination of particulate matter concentration. The minimum sampling time for each run shall be one hour.

The remainder of the condition remains the same.

4.2 Specific Testing Requirements

New Conditions

4.2.1 No later than 180 days after initial startup following completion of the Thermal Performance Upgrade One (TPU1) or the Low Load Turndown (LLTD) upgrade, the Permittee shall conduct initial performance tests for total PM on each combined combustion turbine and duct burner stack specified in Condition 3.3.1, to verify compliance with Condition 3.3.6c and furnish to the Division a written report of the results of each performance tests. Subsequent performance test, on each affected facility, shall be conducted no more than 60 months following the initial or previous performance test.

[391-3-1-.02(6)(b)1(i) and 40 CFR 52.21]

4.2.2 Within 60 days after achieving the maximum production rate following the completion of the Thermal Performance Upgrade One (TPU1) upgrade, but not later than 180 days after the initial startup, the Permittee shall conduct performance tests on each combined combustion turbine and duct burner stack specified in Condition 3.3.1, for NO_x emissions in accordance with 40 CFR 60.4400 to verify compliance with 3.3.6a. If the NO_x CEMS is used as the initial compliance method, the initial performance test for each NO_x CEMS specified in Permit Condition 5.2.1a for each affected facility must be performed in accordance with 40 CFR 60.4405.

[40 CFR 52.21, 40 CFR 60.8, 40 CFR 60.4400, 40 CFR 60.4405, 391-3-1-.02(6)(b)1(i)]

PART 5.0 REQUIREMENTS FOR MONITORING (Related to Data Collection)**5.2 Specific Monitoring Requirements****Modified Conditions**

- 5.2.1 The Permittee shall install, calibrate, maintain, and operate a system to continuously monitor and record the indicated pollutants on the following equipment. Each system shall meet the applicable performance specification(s) of the Division's monitoring requirements: [391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(i)]
- a. A Continuous Emissions Monitoring System (CEMS) for measuring NO_x concentration and diluent concentration (either oxygen or carbon dioxide) discharge to the atmosphere from each combined turbine and duct burner stack specified in Condition 3.3.1. The one-hour average nitrogen oxides emissions rates shall also be recorded in pound per million Btu heat input, and ppm corrected to 15 percent oxygen on a dry basis. The diluent concentration shall be expressed in percent.
[391-3-1-.02(6)(b)1, 40 CFR 70.6(a)(3)(i), 40 CFR 52.21; 40 CFR 60.13, 40 CFR 64.2(b)(1)(vi) (exemption), **and 40 CFR 60.4345 (subsumed)**]
- b. A CEMS for measuring carbon monoxide concentration and diluent (either oxygen or carbon dioxide) concentration discharge to the atmosphere from each combustion turbine and duct burner combined stack specified in Condition 3.3.1. The one-hour average carbon monoxide emission rates shall also be recorded in pound per million Btu heat input and ppm, corrected to 15 percent oxygen on a dry basis.
[40 CFR 52.21 and 40 CFR 64.2(b)(1)(vi) (exemption)]
- 5.2.3 The sulfur content of the natural gas burned in Combustion Turbines CT8A and CT8B and Duct Burners DB8A and DB8B shall be monitored by the submittal of a semiannual analysis of the gas by the supplier or by the Permittee.
[391-3-1-02(6)(b)1.; 40 CFR 52.21; 40 CFR 70.6(a)(3)(i); Authority for Approval of Custom Fuel Monitoring Schedules under NSPS Subpart GG approved by U.S. EPA August 14, 1987; and 40 CFR 60.334(h)(1) and (h)(4), **40 CFR 60.4365 (subsumed)**]]
- 5.2.4 Deleted.
- 5.2.5 No determination of the nitrogen content of the natural gas burned in Combustion Turbines CT8A and CT8B shall be required. **This condition will no longer apply upon restart of the units following completion of the Thermal Performance Upgrade One (TPU1) upgrade.**
[Authority for Approval of Custom Fuel Monitoring Schedules under NSPS GG approved by U.S. EPA August 14, 1987 and 40 CFR 60.334(h)(2) (subsumed)]

New Condition

- 5.2.9 Following completion of the Thermal Performance Upgrade One (TPU1) upgrade, the Permittee shall calculate a 30-day rolling average NOx emission rate (in ppmvd at 15 percent oxygen) for each combined cycle system identified in Condition 3.3.1. The 30-day rolling average NOx emission rate is the arithmetic average of all hourly NOx emission data in ppm, determined in accordance with Condition 5.2.1a, for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly NOx emission rates for the preceding 30 unit operating days if a valid NOx emission rate is obtained for at least 75 percent of all operating hours.
[391-3-1.02(6)(b)1, 40 CFR 70.6(a)(3)(i), 40 CFR 60.4380]

PART 6.0 OTHER RECORD KEEPING AND REPORTING REQUIREMENTS**6.1 General Record Keeping and Reporting Requirements**

6.1.7 For the purpose of reporting excess emissions, exceedances or excursions in the report required in Condition 6.1.4, the following excess emissions, exceedances, and excursions shall be reported:
[391-3-1-.02(6)(b)1 and 40 CFR 70.6(a)(3)(iii)]

- a. Excess emissions: (means for the purpose of this Condition and Condition 6.1.4, any condition that is detected by monitoring or record keeping which is specifically defined, or stated to be, excess emissions by an applicable requirement)

New Conditions

- i. Following completion of the Thermal Performance Upgrade One (TPU1) upgrade, any time the total potential sulfur emissions of the fuel being burned in Combustion Turbines CT8A and CT8B and Duct Burners DB8A and DB8B exceed 0.060 lb SO₂/MMBtu heat input (equivalent to 20 grains sulfur per 100 scf).
[40 CFR 60.4330(a)2]
- ii. Following completion of the Thermal Performance Upgrade One (TPU1) upgrade, any unit operating period in which the 30-day rolling average NO_x emission rate from each combined combustion turbine/duct burner stack exceeds the applicable emission standards as stated in Condition 3.3.15. The definition of a “30 unit operating day average NO_x emission rate” is defined in 40 CFR 60.4380(b)(1).
[40 CFR 60.4350 and 40 CFR 60.4380(b)(1)]
- b. Exceedances: (means for the purpose of this Condition and Condition 6.1.4, any condition that is detected by monitoring or record keeping that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) do not meet the applicable emission limitation or standard consistent with the averaging period specified for averaging the results of the monitoring)

Modified Conditions

- i. Any four-hour rolling average NO_x emission rate, which exceeds 3.0 ppmvd at 15% oxygen for each combustion turbine and duct burner stack specified in Condition 3.3.1.
[391-3-1.02(6)(b)1, 40 CFR 70.6(a)(3)(i); 40 CFR 52.21]
- ix. Any semiannual analysis of the natural gas fired in any of Combustion Turbine CT8A and CT8B whose sulfur content exceed 0.8 weight percent. **This condition will no longer apply upon restart of the units following completion of the Thermal Performance Upgrade One (TPU1) upgrade.**
[40 CFR 60.334(i)(3)(i)(B) (subsumed)]

- d. In addition to the excess emissions, exceedances and excursions specified above, the following should also be included with the report required in Condition 6.1.4:

Modified Condition

- vii. The reports of monitor downtime as defined in 40 CFR 60.334(j)(1)(iii)(B). Each report shall be submitted in accordance with 60.7(c) and 60.334(j)(1)(iii). **This condition will no longer apply upon restart of the units following completion of the Thermal Performance Upgrade One (TPU1) upgrade.**

New Condition

- ix. Following completion of the Thermal Performance Upgrade One (TPU1) upgrade, the reports of monitor downtime as defined in 40 CFR 60.4380(b)(2). Each report shall be submitted in accordance with 60.7(c) and 60.4380(b).

The remainder of the condition remains the same

6.2 Specific Record Keeping and Reporting Requirements

New Conditions

- 6.2.11 The Permittee shall monitor the emissions from each combined combustion turbine and duct burner stack specified in Condition 3.3 1 of any regulated NSR pollutant from the facility that could increase as a result of the CT Upgrades Project and calculate and maintain a record of the annual emissions, in tons-per-year on a calendar basis, for a period of ten years following resumption of regular operations after completion of the CT Upgrades Project. These records shall be retained for a period of five years past the end of each calendar year.

If the Permittee is required to or elects to exclude emissions associated with startups, shutdowns, and/or malfunctions from estimations of projected actual emissions for PSD applicability purposes as allowed by Georgia Rule 391-3-1-.02(7)(a)2.(ii)(II)II, the Permittee may exclude such emissions from the calculation of annual emissions.

[391-3-1-.02(7)(b)15.(i)(III)]

- 6.2.12 The Permittee shall calculate the actual increase in emissions from each combined combustion turbine and duct burner stack specified in Condition 3.3.1 due to demand growth, in tons per year on a calendar year basis, for a period 10 years following resumption of regular operations after the changes. These records shall be retained for a period of five years past the end of each calendar year.

[391-3-1-.02(7)(b)15.(i)(IV)]

- 6.2.13 The Permittee shall submit a report to the Division within 60 days after the end of each year during which records must be generated under Conditions 6.2.11 and 6.2.12 setting out the unit's annual emissions and the unit's actual increase in emissions due to demand growth, from each combined combustion turbine and duct burner stack specified in Condition 3.3.1 during the calendar year that preceded submission of the report.

[391-3-1-.02(7)(b)15.(i)(V)]

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- 6.2.14 The Permittee shall provide written notification of the date the Emission Unit IDs CT8A and CT8B resume regular operations after installation of the Thermal Performance Upgrade One (TPU1) project or the Low Load Turndown (LLTD) postmarked within 30 days after such date.

[391-3-1.02(6)(b)l and 40 CFR 70.6(a)(3)(i)]

PART 7.0 OTHER SPECIFIC REQUIREMENTS

7.14 Specific Conditions

New Conditions

7.14.1 Before beginning actual construction of the modifications as described in Application No. TV-486572, the Permittee shall document and maintain a record of the following information:
[391-3-1-.02(7)(b)15.(i)(I)]

- a. Description of project;
- b. Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project; and
- c. A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emission, the projected actual emissions, the amount of emissions excluded under 40 CFR 52.21(b)(41)(ii)(c) and an explanation for why such amount was excluded, and any netting calculations, if applicable.
- d. The records required above shall be retained for a period of 10 years following resumption of regular operations after the change, or for a period of 15 years following resumption of regular operations after the change if the project increased the design capacity of or potential to emit of a regulated NSR pollutant at such emissions unit.

7.14.2 At least 30 days before beginning actual construction of the modifications as described in Application No. TV-486572, the Permittee shall provide a copy of the information set out in Condition 7.14.1 to the Division. If construction will begin after December 31, 2022, the Permittee shall update the determination required by Condition 7.14.1.c and submit the updated information to the Division at least 30 days before beginning actual construction.
[391-3-1-.02(7)(b)15.(i)(II)]